

covered by Borrelly the same morning. It is an interesting fact that although the difference in longitude of the two stations is about five hours, the Harvard cablegram announcing my discovery reached Kiel two hours before Borrelly's.

Nebulae Discovered at the Chamberlin Observatory, University Park, Colorado. By Herbert A. Howe.

(Communicated by the Secretaries.)

During the twelve months ending 1900 June 30, the following nebulae, supposed to be new, have been noted. The positions of all except one have been micrometrically measured, and are given for 1900.0. All owe their discovery to their proximity to known nebulae, the places of which were being measured. In the "Descriptions" and "Notes" numbers enclosed in brackets refer to the Index Catalogue; others are the current ones of the N.G.C.

No.	Date. 1899.	R.A. h m s	Dec. ° ' "	De-scri-ptions
1	Nov. 6 1900.	0 30 28	- 3 25.7	eF, vS, in field with 161.
2	Jan. 1	1 18 57	- 2 10 6	eF, vS, possibly only a faint star.
3	Jan. 19	1 19 46	- 2 8.3	eF, eS; 530 is n.p.
4	Jan. 1	1 47 8	-17 16.9	eF, eS.
5	Jan. 1	1 48 11	-17 9.7	eF, eS.
6	Nov. 24 1899.	1 52 4	-17 1.7	F, eS.
7	Jan. 30 1900.	2 38 58	-16 7.7	vS, vF, mbM; near 1081.
8	Jan. 23	2 43 20	-14 24.6	eF, vS; near 1103.
9	Jan. 31	2 50 11	-16 3.5	vF, eS; almost stellar.
10	Jan. 30	3 1 38	-10 6.9	eF, S.
11	Jan. 22	3 4 1	-23 26.3	vF, L; near 1230.
12	Jan. 24	3 5 57	-11 10.6	eF, vS; near 1238.
13	Jan. 19	3 34 27	-15 49.6	eF, eS, v diffic.; near 1405.
14	Jan. 20	4 9 57	-13 25.5	eF, eS, almost stellar; near 1538.
15	Jan. 20	4 10 17	-13 26.5	eF, eS, diffic.; near 1538.
16	Jan. 31	4 27 25 ±	- 5 58 ±	eF, vS; f 1594, 90° ±, 3'n.
17	Jan. 22	5 48 12	-17 48.5	eF, pS; near (438).
18	Apr. 19	10 58 56	-19 33.3	vF, vS.
19	June 29	13 1 16	+54 13.2	vF, vS.
20	June 21	13 43 24	-29 47.8	F, eS, bM.
21	Sept. 11 1899.	18 12 41	+61 7.6	eF, eS, v diffic.; near 6617.
22	Nov. 25	23 19 47	+13 26.8	eF, eS; near 7651.
23	Nov. 27	23 33 27	+26 25.9	eF, eS; near 7720.
24	Nov. 27	23 33 38	+26 27.4	eF, eS; near 7720.

Notes.

No. 1 is attended by a star of mag. 14, a trifle south, and by another, which follows the nebula closely.

No. 2 is accompanied by a star of mag. 13, a trifle south preceding. The nebula is about 3' from 530, which is identical with (106), the position of 530 in the N.G.C. being slightly erroneous. According to my measures, the position of 530 is $1^h 19^m 36^s - 2^\circ 6' 5''$; this agrees with Bigourdan's place for (106). No. 4 should perhaps be reckoned as identical with 690, though the N.G.C. place of the latter is $1^h 44^m 31^s - 17^\circ 14' 0''$ when reduced to 1900.0. However, Leavenworth's declinations are not apt to be so erroneous as would be the case if No. 4 were identical with 690. No. 6 is a star of mag. 11, with very slight outlying nebulosity.

No. 7 is equivalent in brightness to a star of mag. 13.

No. 10 is accompanied by a star of mag. 9 which follows eight seconds at the same declination.

No. 19 is near (847); 4973 and 4974, according to the N.G.C., follow No. 19 less than a minute of time; but their relative positions are not the same as those of (847) and No. 19. I looked for them on one night, when the seeing was poor, and could not be sure of them.

No. 22 precedes a star of mag. 9.5 thirteen seconds, $0' 2''$ north.

No. 24 looks like a star of mag. 13, blurred atmospherically. Other faint nebulæ are suspected in its vicinity.

No. 15 of the list in *M.N.* lviii. 9, has now been measured micrometrically, and its position is $12^h 45^m 43^s - 13^\circ 57' 1''$.

A nebula is suspected 5' south of 4862. Two or three very faint nebulæ are suspected near 5664.

Ephemeris of Eros. By Frank Robbins.

In the *Astronomical Journal* (Vol. xix. No. 19, 451, 1898, December 12, page 155), Dr. S. C. Chandler, of Cambridge, U.S.A., has given the orbital elements upon which is founded the ephemeris now offered to the Royal Astronomical Society.

Dr. Chandler's elements were derived from the discussion of 142 observations, both visual and photographic, made at Berlin, Mount Hamilton, Washington, Harvard, and elsewhere, by the discoverer, De Witt, and by various observers, including Hussey, Frisby, Wendell, Barnard, and others, between 1898 August 17, and 1898 November 26, a comparatively short period with but few observations. Nevertheless the places derived from photographic observations made at Arequipa as long ago as 1893 December 19 (*Astronomical Journal*, Vol. xix. No. 19, 452, page 161), are not so very far from the computed places.

Knowing this when commencing this calculation in 1899 May, I did not try to improve the elements in any respect. In the time at my disposal it would have been impossible to extend the range of observations, confessedly somewhat limited, with a view